

TRS-80
COMPUTING
65 OAK ROAD
CANTON, MA. 02021
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APRIL 1989

\$1.00
CANADIAN \$2.00

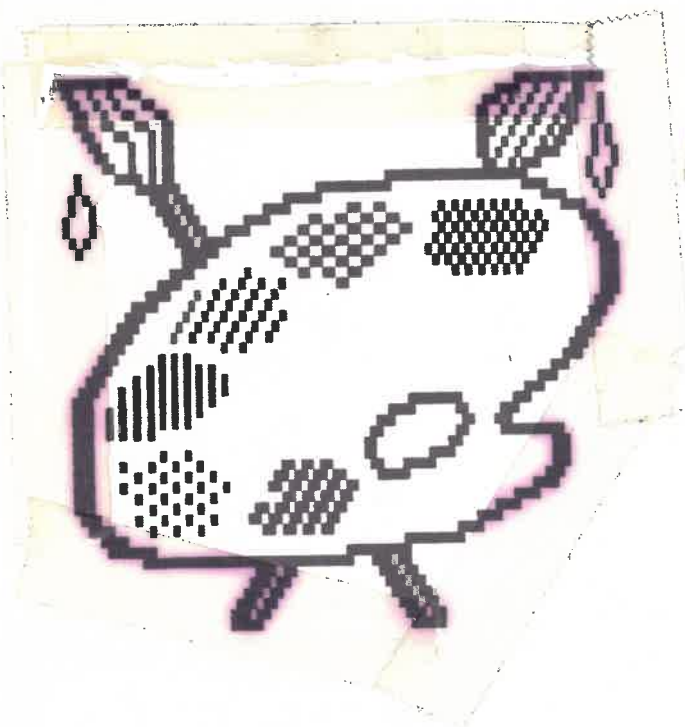
VOLUME 2
NUMBER 7

TRS-80 COMPUTING

THE BI-MONTHLY MAGAZINE FOR COLOR COMPUTER USERS

DRAWING ON THE COCO

UTILITIES
ISSUE!



* A DRAWING UTILITY PROGRAM IN WHICH
YOU CAN SAVE, LOAD AND PRINT PICTURES

* A DISK UTILITY PROGRAM

* A 'APRIL SHOWERS' MUSIC/GRAPHICS
PROGRAM

* PART II OF LAST ISSUE'S BEGINNER'S
TUTORIAL FOR WRITING BASIC PROGRAMS

AND MUCH, MUCH MORE!!!

ORIGINAL PROGRAMS FOR:
TANDY COCO/APPLE/C64/128

INTERESTING ARTICLES FOR:
TANDY, AND OTHER COMPUTERS

TABLE OF CONTENTS

TRS-80 COMPUTING

I. GRAPHICS PROGRAM-#12.....	2	TRS-80 COMPUTING
II. TANDY COCO SOFTWARE.....	3	EDITOR & PUBLISHER: JOSEPH AHERN
III. WHAT'S ON SALE?.....	4	
IV. THE PROGRAMMER.....	5	PROGRAM MANAGER: DAVID MCNALLY
A. MATH PROBLEM SOLVING (TANDY).....	6	CONTRIBUTING EDITOR: ALBERT NOAH
B. SECRET CODES (ALL).....	7	
C. APRIL SHOWERS (TANDY).....	8	
D. DRAW (TANDY).....	9	
V. ARTICLE SECTION.....	14	
A. BEGINNER'S SERIES PART II.....	14	
B. FLIPPY THE WONDER DISK.....	15	
VI. ORDER FORM.....	16	
VII. SPECIALS-DISK UTILITY.....	17	
VIII. ADVENTURE PROGRAM # 2.....	19	
IX. TRS-80 COMPUTING ON TAPE.....	20	
X. TRS-80 COMPUTING SOFTWARE.....	21	
XI. DUNGEONMASTER SOFTWARE.....	23	
XII. APPLE/COMMODORE SOFTWARE.....	24	
XIII. CLASSIFIED SECTION.....	25	

A ST. PATRICK'S DAY CLOVER



ECB

GRAPHICS PROGRAM-#12

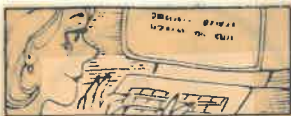
required

This St. Patrick's Day greeting draws a green three-leaf clover and a little message with it on the high resolution PMODE 3 screen. For more graphics and sound see the 'April Showers' music program in this issue.

THE PROGRAM: THREE-LEAF CLOVER

```
0 ' *****
1 ' * 3 LEAF CLOVER *
2 ' * BY JOE AHERN *
3 ' * ECB REQUIRED *
4 ' *****
5 CLEAR 500:GOSUB 100
8 PMODE 3,1:PCLS3
10 SCREEN 1,0
15 CIRCLE(100,56),30,1,1,.25,0
20 CIRCLE(144,56),30,1,1,.50,.25
25 CIRCLE(82,100),27,1,1,.25,.75
30 CIRCLE(100,124),23,1,.4,0,.50
35 CIRCLE(162,100),27,1,1,.75,.25
40 CIRCLE(148,124),22,1,.4,0,.50
45 DRAW"C1;BM104,124;BR16D16G16F8E16U24BR16"
50 PAINT(128,96),1,1
60 DRAW"C4;BM97,56;"+H$+A$+P$+P$+Y$
62 DRAW"BM112,75;"+S$+T$+"R1"
64 DRAW"BM78,96;"+P$+A$+T$+R$+I$+C$+K$+S$
66 DRAW"BM104,114;"+D$+A$+Y$+"BR4U1BU2U5"
70 GOTO 70
100 A$="U8R8D4L8BR8D4BR4"
102 C$="U8R6BL6D8R6BR4"
104 D$="U8R6F2D4G2L6BR12"
105 H$="U8BR8D8BU4L8BD4BR12"
106 I$="BU8R8BL4D8BL4R8BR4"
108 K$="U8BR8G4L4BR4F4BR4"
110 P$="U8R8D4L8BD4BR12"
112 R$="U8R8D4L8BR4F4BR4"
114 S$="BU4U4R8BD4L8BR8D4L8BR12"
116 T$="BU8R8BL4D8BR8"
118 Y$="BR4U4H4F4E4G4D4BR4"
120 RETURN
```

Press <BREAK> to exit the program.



According to U.S. Bureau of Labor Statistics estimates, the job classification with the most openings likely between now and 2000 is that of computer service technician.

Kung-Fu Dude

An exciting arcade game. The BEST karate game ever created for the CoCo! Destroy opponents and evade obstacles as you grow ever closer to your ultimate objective. Spectacular graphics, sound effects, and animation! Req. 64K CoCo, disk drive & joystick. Only \$24.95. See 2/88 Rainbow review.



HALL OF THE KING TRILOGY—The epic adventure is back! The largest adventure campaign ever seen for the CoCo is again available! A total of six disks of intense graphic adventure will have you playing for weeks! Each section is a two-disk stand alone adventure, but all three together form an epic saga. Quest for the legendary Earthstone in the ancient dwelling of the dwarves while you enjoy the classic graphics that made this trilogy famous! Each adventure can be purchased separately for \$29.95, the lowest price ever, or you can purchase the entire set for only \$79.95! Req. 64K CoCo and disk drive. See 6/86 and 11/87 Rainbow review. Also 7/88 Gamer's Connection Review



WHITE FIRE OF ETERNITY



Enter the era of monsters and magic in this splendid 64K animated adventure! See 12/86 Rainbow review. Disk \$19.95.

CHAMPION



Become a super-hero in this unique 64K action adventure. Great graphics and sound effects! See 5/87 Rainbow review. Disk \$19.95.

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Another great 64K animated adventure! Can you obtain the enchanted sword to slay the evil dragon? See 11/86 Rainbow review. Disk \$19.95.



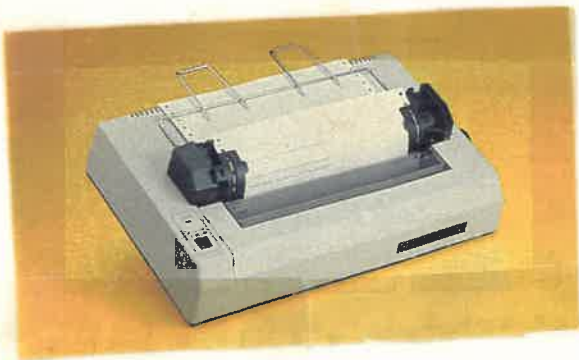
SUNDOG SYSTEMS
21 EDINBURG DRIVE
PITTSBURGH, PA 15235
(412) 372-5674

Personal checks, money orders, and American C.O.D. orders accepted. Include \$2.50 for S/H. \$3.00 extra for C.O.D. orders. PA residents add 6% sales tax. Authorship and dealer inquires welcome.

WHAT'S ON SALE?
 Current computer sales @ Radio Shack

SALE ENDS: 4/24/89

DMP-106 DOT-MATRIX PERSONAL PRINTER



~~\$159.95~~

Reg. \$219.95

TSP Available

Ideal for data processing and general-purpose use. Prints 80 cps and produces bit-image graphics, Bi-directional with removable adjustable tractor. IBM Graphics printer and Tandy emulations. #26-2802
 Ribbon for DMP-106. #26-1288 \$7.95

CCR-81 COMPUTER CASSETTE RECORDER AND MICROPHONE PACKAGE



~~\$29.95~~

Reg. Sep. Items \$64.94

Load, save data on cassette tapes.
 #26-1208. Includes Audio Microphone (#33-1054) for indication.



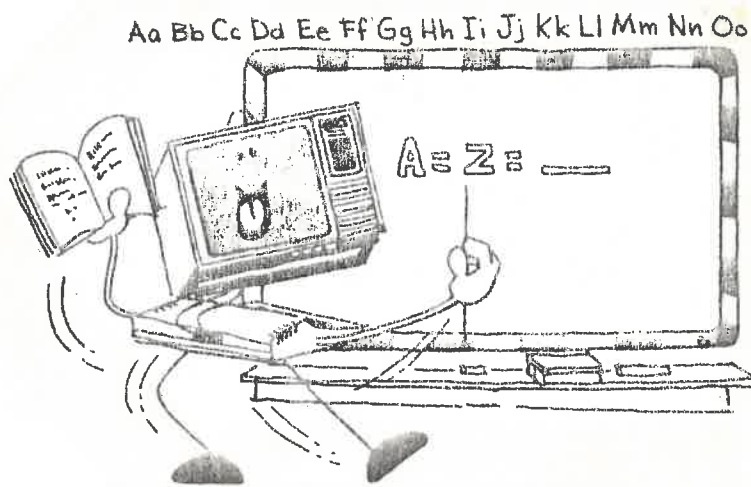
Sale! Color Computer ROM Paks

Save \$5—Downland. Reg. \$19.95. #26-3046	Sale 14.95
Save \$10—Thexder. Reg. \$24.95. #26-3072	Sale 14.95
Save \$9—Shanghai. Reg. \$24.95. #26-3084	Sale 15.95
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#26-3093	Sale 14.95
Save \$5—Baseball. Reg. \$19.95. #26-3095	Sale 14.95
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#26-3106	Sale 9.95
Save \$15—Color File II. Reg. \$29.95. #26-3110	Sale 14.95
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Sale! Color Computer Disk Software

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#26-3259	Sale 44.95
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#26-3272	Sale 19.95
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#26-3296	Sale 19.95

THE PROGRAMMER



A P R I L

THIS MONTH'S PROGRAM
MATH: PROBLEM SOLVING

◆◆◆ MATH: PROBLEM SOLVING ◆◆◆

BY DAVID MCNALLY

4K CB
EDUCATIONAL

This math problem solving program is good for youngsters that are practicing their addition problems. When you run the program the computer gives you 10 addition problems to solve. At the end of the program the computer gives you your score. If you want the addition problems to be easier, simply lower the two numbers in line 104.

THE PROGRAM: MATHPRO

```

0 ' MATH: PROBLEM SOLVING
1 ' BY DAVID MCNALLY
2 SCORE=0
5 CLS0:NUMBER=1:GOTO 136
10 DATA JILL,BOB,BILL,SAM,JEN,KATE
12 T=RND(6):P=0
14 FOR L=1 TO T
16 READ A$:NEXT L
18 IF T<6 THEN T=T+1:P=P+1:GOTO 18
19 GOTO 34
20 DATA BALLS,APPLES,MARBLES,PEARS,COOKIES,PENCILS,TICKETS,CRAYONS,BOOKS,TAPES
34 FOR H=1 TO P:READ EXTRA$:NEXT H
36 J=RND(10):FOR O=1 TO J:READ B$:NEXT O
38 RESTORE:GOTO 100
100 FOR Y=0 TO 63:SET(Y,2,4):SET(Y,12,4):NEXT Y
102 FOR Y=2 TO 12:SET(0,Y,4):SET(63,Y,4):NEXT Y
104 N1=RND(500):N2=RND(500)
106 LN=LEN(A$)+5+LEN(STR$(N1))+LEN(B$):P1=INT(LN/2):P2=15-P1-1
108 PRINT@65,NUMBER;:PRINT@65+P2,A$;" HAS";N1;B$;". ";
109 IF A$="JILL"ORA$="JEN"ORA$="KATE"THEN SEX$="SHE"ELSE SEX$="HE"
110 LN=11+LEN(STR$(N2))+LEN(SEX$):P1=INT(LN/2):P2=15-P1
112 PRINT@97+P2,SEX$;" GOT";N2;"MORE. ";
114 IF A$="JILL"ORA$="JEN"ORA$="KATE"THEN SEX$="SHE" ELSE SEX$="HE"
116 LN=14+LEN(SEX$)+10:P1=INT(LN/2):P2=15-P1-1
118 PRINT@162+P2,"HOW MANY DOES ";SEX$;" HAVE NOW?";
120 PRINT@288,"ANSWER: ";:INPUTD:IF D=N1+N2 THEN PRINT@490,"CORRECT!";:SOUND 150,
5:ELSE PRINT@490,"WRONG!!";:SOUND 28,5
121 IF D=N1+N2 THEN SCORE=SCORE+1
122 FOR T=1 TO 3000:NEXT T
124 CL$=CHR$(128)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(128)+CH
R$(128)+CHR$(128)+CHR$(128)
126 PRINT@65,CL$+CL$+CL$;:PRINT@97,CL$+CL$+CL$;:PRINT@161,CL$+CL$+CL$;:PRINT@288
,CL$+CL$+CL$+CHR$(128)+CHR$(128);:PRINT@480,CL$+CL$;128 NUMBER=NUMBER+1:IF NUMBE
R>10 THEN NUMBER=0:CLS:ELSE GOTO 12
130 PRINT"YOU GOT";SCORE;"RIGHT OUT OF TEN."
135 END
136 FOR Y=0 TO 63:SET(Y,2,4):SET(Y,12,4):NEXT Y
138 FOR Y=2 TO 12:SET(0,Y,4):SET(63,Y,4):NEXT Y
140 PRINT@69,"MATH: PROBLEM SOLVING";
142 PRINT@168,"BY DAVID MCNALLY";
144 FOR T=1 TO 1000:NEXT T
145 Q=69:R=168
146 PRINT@Q,CHR$(128);:Q=Q+1
147 IF Q=90 THEN 148 ELSE 146
148 PRINT@R,CHR$(128);:R=R+1
150 IF R=184 THEN 10 ELSE 148

```

This program allows you to encode and decode messages. All instructions are self-explanatory.

THE PROGRAM: SECRET

```

0 ' SECRET CODES
2 ' BY DAVID MCNALLY
3 ' 4K COLOR BASIC
5 CLS
10 PRINT"A. ENCODE A MESSAGE"
12 PRINT"B. DECODE A MESSAGE"
14 A$=INKEY$:IF A$=""THEN 14
16 IF A$="A"THEN CLS:GOTO 30
18 IF A$="B"THEN CLS:GOTO 50
20 IF A$="Q"THEN CLS:END
22 GOTO 5
30 PRINT"ENTER MESSAGE";:INPUT B$
31 PRINT
32 FOR T=1 TO LEN(B$)
34 K=ASC(MID$(B$,T,1))
36 K=K+6:PRINT CHR$(K);
38 NEXT T
39 PRINT
40 PRINT:PRINT"<ENTER> TO CONT.":INPUT G$
42 GOTO 5
50 PRINT"ENTER MESSAGE TO DECODE";:INPUT B$
51 PRINT
52 FOR T=1 TO LEN(B$)
54 K=ASC(MID$(B$,T,1))
56 K=K-6:PRINT CHR$(K);
58 NEXT T
59 PRINT
60 PRINT:PRINT"<RETURN> TO CONT.":INPUT G$
62 GOTO 5

```

NOTE: To make this program compatible with the Apple & C64/128 computers, the following changes are necessary:

1. Change all CLS commands to HOME on an Apple & PRINT CHR\$(147) on a C64/128.
2. Change line 14 to read: GET A\$:IF A\$="" THEN 14.
3. You may want to change <ENTER> to <RETURN> in lines 40 and 60, although this is not necessary.

APRIL SHOWERS

BY JOE AHERN

Spring is here! Since it is April, and April is known as the rain showers month, I decided to list this music/graphics program that plays the old-time classic, "April Showers".

THE PROGRAM: APRILSH

```
0 ' *****
1 ' * APRIL SHOWERS *
2 ' * BY JOE AHERN *
3 ' * 16K ECB REQ. *
4 ' *****
5 PMODE 3,1
6 PCLS
10 SCREEN 1,0
12 CIRCLE(128,96),40,2,1,.50,0
14 CIRCLE(96,96),8,2,1,0,.50
16 CIRCLE(112,96),8,2,1,0,.50
18 CIRCLE(128,96),8,2,1,0,.50
20 CIRCLE(144,96),8,2,1,0,.50
22 CIRCLE(160,96),8,2,1,0,.50
24 DRAW"C2;BM124,96;D32G8L4U6L4D10R12E12U32
25 PAINT(128,80),2,2:PAINT(128,110),2,2
30 FOR C=1 TO 80
32 X=RND(254):Y=RND(191)
34 A$="C3;BM"+STR$(X)+", "+STR$(Y)+";D2"
35 DRAW A$
38 NEXT C
100 FOR L=1 TO 86
102 READ A:READ B
104 SOUND A,B
105 NEXT L:FORP=1TO500:NEXTP:CLS:END
200 DATA 32,5,5,5,32,5,108,5,108,8,32,5,5,5,32,5,125,8
210 DATA 32,5,5,5,32,5,133,5,133,8,32,5,5,5,32,5,147,8
220 DATA 125,5,133,5,147,5,147,5,58,8,147,5,133,5,125,5,133,8
230 DATA 58,5,78,5,89,5,125,5,159,5,159,5,125,5,125,5,159,5,159,5,125,5,147,5,13
3,5,133,5,125,5,108,6
240 DATA 32,5,5,5,32,5,108,5,108,8,32,5,5,5,32,5,125,8
250 DATA 58,5,32,5,58,5,125,5,125,8,58,5,32,5,58,5,133,8,58,5,32,5,58,5,147,5,13
3,5,147,5,133,5,147,5,133,5,108,5
260 DATA 125,5,147,5,89,5,108,5,125,8,89,5,58,5,78,5,58,5,78,5,58,5,32,5,108,5,1
25,5,89,8
```



NOTE: Make sure you type the DATA numbers very carefully in lines 200-260.

D R A W !!

BY ALBERT NOAH

32K ECB
UTILITY

DRAW is a simple drawing program that will allow you to Draw a picture on the Hi-Res screen, save a picture to disk or tape, load a picture from disk or tape, view a picture in current memory, or to print a picture.

After you have typed in DRAW type in the screen dump for your printer , renumber it (RENUM), and the save it to disk or tape.

When you run the program you should get a menu with six options. To choose an option press the corresponding key. EX. To make a picture you would press the 1 key.

If you select option 1, MAKE A PIC, you should be at the PMODE 4 screen. To move around use the following keys:

Use the arrow keys to move up, down, left, or right.

The @ key will move at a 45 degree angle.

The / key will move at a 135 degree angle.

The Z key will move at a 225 degree angle.

The Q key will move at a 315 degree angle.

(See figure 1)

The CLEAR key will clear the screen.

And the M key will return you to the menu.

If you choose option 2, SAVE A PIC, you will be asked if you use tape or disk. Press T or D and ENTER.

Next you will be prompted for a filename. Do not add an Extention because the program uses /PIC as the extention. After the picture has been saved you will be returned to the main menu.

If you choose option 3, LOAD A PIC, you will get the same prompts as you would to save one. After a picture has loaded you will be returned to the menu.

If you choose option 4, VIEW A PIC, the picture in current memory will be displayed. Hit ENTER to return to the menu.

If you choose option 5, PRINT PIC, be sure that your printer is on-line and has paper in it. When the picture has finished printing you will be returned to the menu.

NOTE: If you own a DMP-105/106 you will be prompted for a X,Y skip factor. You can input any number that you want, but the higher the number the less detail your picture will have. I reccomend using the numbers 1-4.

I've found that answering 2 to both prompts gives the best print-out. You can use different numbers to shrink, pull, or stretch your print-out.

If you choose option 6, COLD START, your computer will re-boot and show the regular sign on screen. (The screen that appears when you first turn your computer on).

If you accidentally choose option six you can save your picture by running DRAW and choosing the SAVE option.

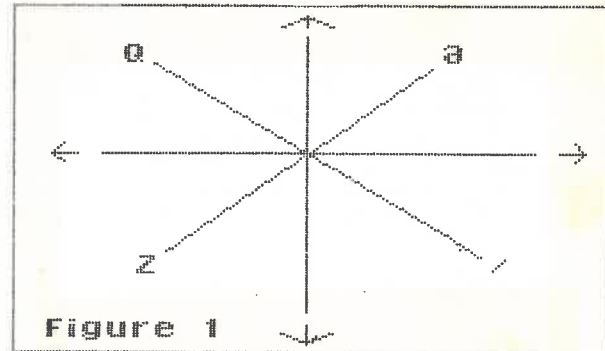
I am planning to add an edit screen, erase mode, the option to pick PMODEs, etc. in a future issue.

You can use the screen dumps to print any picture that is in current memory. Just run the screen dump when you have a picture in memory that you want to print.

If you have any questions or comments you can write to me in care of TRS-80 Computing. Please enclose a S.A.S.E. if you want a reply.

THE LISTING: DRAW

```
10 ' COPYRIGHT (C) MARCH 1989
20 ' DUNGEONMASTER SOFTWARE
30 ' PROGRAMMED BY ALBERT NOAH
40 ' D R A W
50 PCLEAR 4
60 PCLS
70 CLS
80 PRINT@13,"DRAW"
90 PRINT:PRINT:PRINT
100 PRINT"1. MAKE A PIC","2. SAVE A PIC","3. LOAD A PIC","4. VIEW A PIC","5. PRI
NT PIC","6. COLD START"
110 PRINT:PRINTTAB(8)"YOUR CHOICE ? (1-6)"
120 K$=INKEY$:IFK$=""THEN120
130 IFVAL(K$)<1 OR VAL(K$)>6 THEN120
140 ON VAL(K$) GOTO 150,470,540,600,2000,650
150 PMODE 4,1:SCREEN1,0
160 A$=INKEY$:IF A$="" THEN 160
170 IF A$="M" THEN 80
180 IF A$=CHR$(94) GOSUB 280:'UP
190 IF A$=CHR$(9) GOSUB 300:'RIGHT
200 IF A$=CHR$(10) GOSUB 320:'DOWN
210 IF A$=CHR$(8) GOSUB 340
220 IF A$="Q" GOSUB 360
230 IF A$="a" GOSUB 380
240 IF A$="/" GOSUB 400
250 IF A$="Z" GOSUB 420
260 IF A$=CHR$(12) GOSUB 440
270 GOTO 160
280 DRAW "S5;U1"
290 RETURN
300 DRAW "S5;R1"
310 RETURN
320 DRAW "S5;D1"
330 RETURN
340 DRAW"S5;L1"
350 RETURN
360 DRAW "S5;H1"
370 RETURN
380 DRAW "S5;E1"
390 RETURN
400 DRAW "S5;F1"
410 RETURN
420 DRAW "S5;G1"
430 RETURN
440 PCLS
450 RETURN
460 GOTO 150
470 CLS:INPUT"TYPE OR D)ISK";TD$
480 LINE INPUT"FILENAME ?";F$
490 XC=LEN(F$):IF XC<1 OR XC>8 THEN470
500 IF TD$="D" THEN SAVEM F$+"/PIC",3584,9727,3584
510 IF TD$="T" THEN CSAVEM F$,3584,9727,3584
```



```

520 GOTO 70
530 'LOAD PIC
540 CLS:INPUT "T)APE OR D)ISK";TD$
550 LINEINPUT"FILENAME ?";F$
560 XC=LEN(F$):IF XC<1 OR XC>8 THEN 540
570 IF TD$="D" THEN LOADM F$+"/PIC"
580 IF TD$="T" THEN CLOADM F$
590 GOTO 70
600 CLS:PRINT"PRESS ENTER TO RETURN"
610 FOR RR=1 TO1000: NEXT RR
620 PMODE 4,1:SCREEN1,0
630 RR$=INKEY$:IF RR$="" THEN 630
640 GOTO 70
650 POKE 113,0:EXEC40999

```

DMP 105/106 PRINTER DUMP

```

2000 ' COPYRIGHT (C) MARCH 1989
2010 ' DUNGEONMASTER SOFTWARE
2020 ' PROGRAMMED BY ALBERT NOAH
2030 ' DMP-105/106 DUMP
2040 DATA 224,225,226,231,227,233,230,235,228,229,234,236,232,237,238,239,234,22
7
2050 CLS:PRINT"TO CHOOSE THE PRINT SIZE ENTER A NUMBER BETWEEN 1 AND 4 AT THE X
AND Y PROMPTS. (ENTERING 2 AT BOTH PROMPTS GIVES THE BEST PRINT-OUT."
2060 INPUT "X ";XX
2070 INPUT "Y ";YY
2080 DIM P(17)
2090 POKE 150,18
2100 A=224
2110 PRINT#-2,CHR$(27);CHR$(20);
2120 PMODE 4,1:SCREEN1,1:PRINT#-2,CHR$(27);CHR$(28)
2130 FOR P=0 TO 17:READ P(P):NEXT
2140 PRINT#-2,CHR$(A);CHR$(A);
2150 FOR Y=0 TO 191 STEP YY
2160 FOR X=0 TO 255 STEP XX
2170 P=0
2180 IF PPOINT (X,Y)=0 THEN P=P+1
2190 IF PPOINT (X+1,Y)=0 THEN P=P+2
2200 IF PPOINT (X,Y+1)=0 THEN P=P+4
2210 IF PPOINT (X+1,Y+1)=0 THEN P=P+8
2220 PRINT#-2,CHR$(P(P));:NEXT:PRINT#-2,CHR$(13);CHR$(A);CHR$(A);
2230 NEXT
2240 PRINT#-2,CHR$(27);CHR$(19)
2250 PRINT#-2,CHR$(27);CHR$(54)
2260 GOTO 70

```

STAR/GEMINI PRINTER DUMP

```

2000 ' COPYRIGHT (C) MARCH 1989
2010 ' DUNGEONMASTER SOFTWARE
2020 ' PROGRAMMED BY ALBERT NOAH
2030 DATA0,0,1,2,3,9,7,6,4,11,5,8,10,13,12,14,0,15
2040 ' G E M I N I DUMP

```

```

2050 PMODE4,1:SCREEN1,1
2060 DIMZ(17):FORI=0TO17:READZ(I):NEXTI
2070 PRINT#-2,CHR$(15);CHR$(27);"A";CHR$(6)
2080 FORY=0TO192STEP2:FORX=0TO255STEP2
2090 GOSUB2120
2100 PRINT#-2,CHR$(C);:NEXTX:PRINT#-2,"":NEXTY
2110 GOTO2110
2120 T=0:P=PPOINT(X,Y):IFP=0 THEN T=T+2
2130 P=PPOINT(X,Y+1):IFP=0 THEN T=T+3
2140 P=PPOINT(X+1,Y):IFP=0 THEN T=T+4
2150 P=PPOINT(X+1,Y+1):IFP=0 THEN T=T+8
2160 C=224+Z(T):RETURN
2170 GOTO 50

```

PROWRITER PRINTER DUMP

```

2000 ' COPYRIGHT (C) MARCH 1989
2010 ' DUNGEONMASTER SOFTWARE
2020 ' PROGRAMMED BY ALBERT NOAH
2030 DATA 0,3,12,15,48,51,60,63,192,195,204,207,240,243,252,255,255
2040 ' PROWRITER DUMP
2050 CLEAR400:DIM D(15)
2060 PK=PEEK(186)*256+PEEK(187)
2070 FOR X=0 TO 15
2080 READ A:D(X)=A:NEXT X
2090 PRINT#-2,CHR$(14);CHR$(27);CHR$(62);CHR$(27)"T16"
2100 FOR A=31 TO 0 STEP -1
2110 A$=CHR$(27)+"S0192"
2120 FOR B=PK TO PK+6143 STEP 32
2130 C=PEEK(B+A) AND 15
2140 B$=B$+CHR$(D(C)):NEXT B
2150 PRINT#-2,TAB(5)A$+B$:B$=""
2160 FOR E=PK TO PK+6143 STEP 32
2170 C=(PEEK(E+A) AND 240)/16
2180 B$=B$+CHR$(D(C)):NEXT E
2190 PRINT#-2,TAB(5)A$+B$:B$=""
2200 NEXT A:PRINT#-2:PRINT#-2
2210 PRINT#-2,CHR$(15);CHR$(27);CHR$(65);CHR$(27);CHR$(60)
2220 GOTO 50

```

DAISEY WHEEL PRINTER DUMP

```

2000 ' COPYRIGHT 1989
2010 ' DUNGEONMASTER SOFTWARE
2020 ' PROGRAMMED BY ALBERT NOAH
2030 ' SCREEN DUMP FOR DAISEY
2040 ' WHEEL PRINTERS
2060 POKE 150,18
2070 DIM P(16):A=224
2080 PRINT#-2,CHR$(27);CHR$(20);
2090 PMODE 4,1:SCREEN1,1:PRINT#-2,CHR$(27);CHR$(28)
2100 FOR P=0 TO 15:READ P(P):NEXT
2110 PRINT#-2,CHR$(A);CHR$(A);
2120 FOR Y=0 TO 191 STEP 2
2130 FOR X=0 TO 255 STEP 2
2140 POKE 65495,0

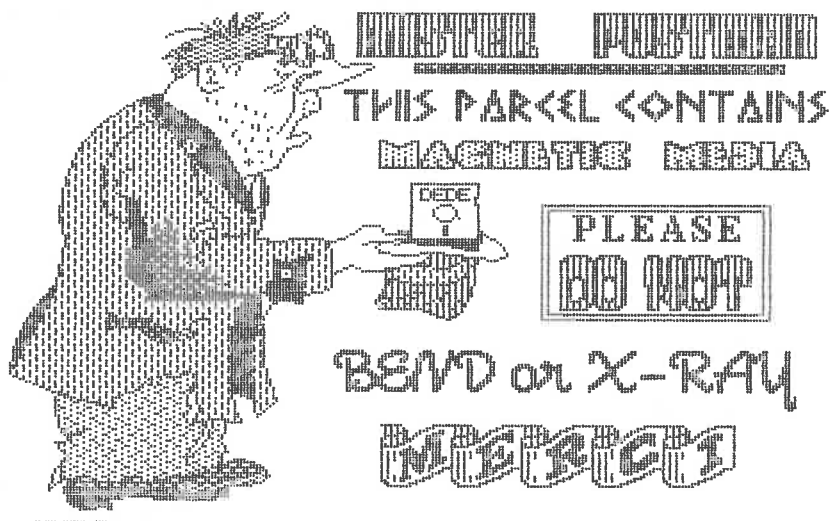
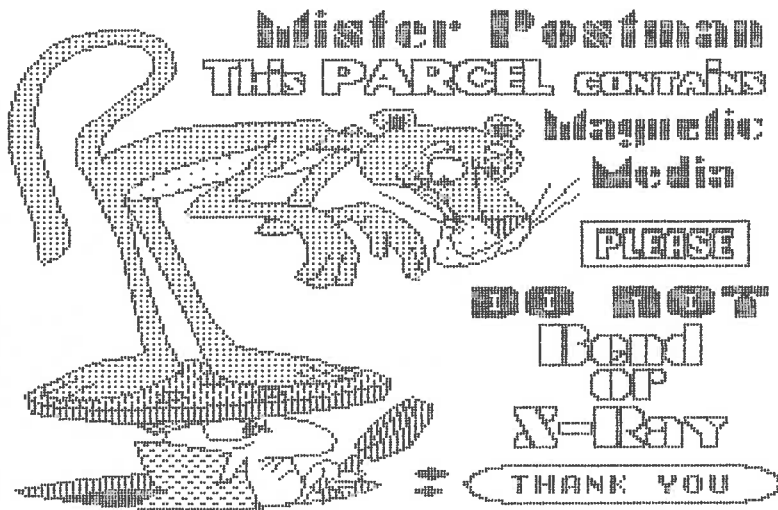
```

```

2150 P=0
2160 IF PPOINT (X,Y)=0 THEN P=P+1
2170 IF PPOINT (X+1,Y)=0 THEN P=P+2
2180 IF PPOINT (X,Y+1)=0 THEN P=P+4
2190 IF PPOINT (X+1,Y+1)=0 THEN P=P+8
2200 POKE 65494,0
2210 PRINT#-2,CHR$(P(P));:NEXT:PRINT#-2,CHR$(13);CHR$(A);CHR$(A);
2220 NEXT
2230 GOTO50
2240 DATA 32,46,46,45,46,42,45,43,46,45,42,43,45,43,43,42,42

```

POSTMAN PICTURES--The two pictures that you see below were drawn out on CoCoMAX II. They will come in very handy if you send out disk shipments to other CoCo users. Simply cut them out, and paste them onto the envelope.



Beginner's Series Part II
by David McNally

If you think that you know the words in Part I, then lets learn some new words.

1. CONT--Continues a program after you have pressed <BREAK> or used the STOP command.
2. STOP--Stops execution of a program.
3. INPUT--Causes the computer to stop and await input from the keyboard.
4. INKEY\$ (same as GET on Apple or Commodore)--Checks the keyboard to see if a key is being pressed.
5. LEN(str)--Returns the length of a string.
6. String--A group of words, letters or symbols that are in ". Ex. PRINT "I AM YOUR COMPUTER." Everything in " is considered a string.

To get an idea on how words 1-5 work lets use sample programs. Retype the program in Part I and change line 30 to read: 30 STOP. Now RUN the program. As you can see, when the computer encounters the STOP command, it stops the program.

Now change line 30 back to: 30 GOTO 30. Rerun the program and press <BREAK>. Now lets suppose you want to continue the program where it left off. Type CONT <ENTER>. The program now starts where it left off.

To see how INPUT works, type NEW and then enter this program.

```
5 CLS (HOME on Apple, ?CHR$(147); on C64/128)
10 INPUT "WHAT IS YOUR NAME";A$
12 PRINT "HI ";A$;". "
14 END
```

When you RUN the program the computer asks you for your name. Type your name and press <ENTER>. Then the computer gives you a little greeting.

The LEN command is used to find the length of a string. In the program above, A\$ holds your name in it. To find the length of A\$ (the string is your name) type: PRINT LEN(A\$) <ENTER>. The computer displays a number. Count how many letters there are in your name and compare that number to the number on your screen. As you can see the computer counted the number of characters in A\$ and displayed it.

To see how INKEY\$ (GET) works, change line 10 to 10 PRINT "TYPE A LETTER" and change line 12 to 12 PRINT A\$. Add this line:

```
11 A$=INKEY$ (or GET A$):IF A$="" THEN 11
```

As you can see, using A\$ (GET) is much faster. The program above prints the keys you type on the screen. Try experimenting with it.

HAPPY PROGRAMMING!!

"Flippy, The Wonder Disk"

By Steven B. Smith

There are various little tricks that hackers come up with to save time and money. This article is intended to help those of you who do not have a double-sided drive, but would like to make use of both sides of an ordinary floppy diskette.

Those of you who get RAINBOW ON DISK are familiar with the term, "flippy diskette". This is a disk with programs recorded on both sides, for use on a single-sided drive; the name "flippy" comes from the fact that to access side two of the diskette, you remove it from the drive, "flip" it, and reinsert it into the drive. What is the secret difference between a "flippy" and a regular diskette? The number of holes in the casing.

For the last year or so, I've been using a simple technique to convert ordinary diskettes into "flippies". The only tool you really need is a note-paper hole puncher, sold at most discount stores.

Look at your diskette. The left side has two differences from the right side. First, on the left side of the large central hole, is a smaller hole punched through the diskette casing, but not through the disk itself. Exactly behind it on the flip side of the disk is an identical hole. Second, on the upper left side of the casing is a Write Protect notch.

Your mission, if you decide to accept it, is to make identical holes in the casing on the right side of the diskette. Insert the business end of the hole punch between the casing and the disk, exactly opposite the small hole on the left side of the large central hole. Don't punch a hole in the disk itself, just the casing above it!!! Use a ruler the first few times to mark the spot where you are going to punch the hole, using the hole on the left side as your guide. After a little practice, you will know where to put the holes accurately enough to dispense with the ruler. After you have punched a hole in the front side of the casing, flip the disk and punch a hole on side two, again using a ruler and the already existing small hole as your guides.

After you have made the first two holes in the diskette casing, use the hole punch or a small knife to cut out a Write Protect notch on the upper right side of the diskette. Again, the notch has to be exactly opposite the Write Protect notch on the left side, or it isn't going to work, so use a ruler to find the right spot the first few times.

Your diskette should now look exactly the same on both sides. To put your workmanship to the test, insert the diskette with side two up, and format it with the DSKINIO command. If you get a WP error, that means you put the new Write Protect notch in the wrong place. If you get an I/O error, that means you need to re-punch the two holes near the right center of the diskette over again, trying to be more accurate about matching up these two holes with the holes on the left side of the center hole.

Try it on two or three disks for practice, until you get it right. It's really quite simple, and it saves money and storage space because you can now store programs on both sides of your diskettes. This technique will work on any brand of diskette, and it will work on single-sided diskettes as well as the more expensive double-sided diskettes (single-siders are usually cheaper, so buy them!). Have fun and experiment, folks, and pass this little trick on to others; your friends and utter strangers will look up to you with awe, as if you were a master hacker. (Recognition is a wonderful thing).

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THANK-YOU

SIGNED. *Joe. Ahern*.....AND *David Mc. Kelly*

TRS-80 COMPUTING
 C/O JOE AHERN
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 CANTON, MA. 02021

DISK UTILITY: BY JOE AHERN

This utility program was basically written for those who own one disk drive. Although some of the functions will be compatible with drive 1 owners, such as Format Disk & Print Disk Directory. The program is menu driven, and all instructions are self-explanatory.

IMPORTANT NOTE: WHEN YOU RUN THE PROGRAM, CHOOSE THE SAVE OPTION FIRST (F), BEFORE CHOOSING ANY OTHER OPTIONS, BECAUSE SOME OF THEM EITHER END OR TOTALLY ERASE THE PROGRAM.

THE PROGRAM: DISKUTIL

```

0 ' DISK UTILITY
1 ' BY JOE AHERN
2 ' 16K ECB REQUIRED
5 PMODE 4,1:PCLS1:COLOR 1,0:SCREEN 1,1
8 I$="R8BL4U12L4R8BL4BD12BR8"
9 T$="BR4U12L4R8BL4BD12BR8"
10 DRAW"C0;BM52,0;R5F2D8G2L5U12BD12BR8BM64,12"+I$+"R8U6L8U6R8BD12BR6U12D5E5B65F7
BR12"
11 LINE(108,6)-(116,6),PSET
12 DRAW"BM128,12;U12BD12R8U12BD12BR4"+T$+I$+"U12BD12R8"
14 DRAW"BM176,12"+I$+T$+"BR4U7L4U5BR8D5L8"
15 E$="U12R5BD6L5BD6R5"
16 DRAW"BM76,32;D12R8U4H1L8R8E1U6L8BR8BD12BR8U7BL2U5BR5D5L5":PSET(99,35,0):PSET(
99,41,0)
18 DRAW"BM106,32;R8BL4D12L5BR12U12R5D12L5BR9"+E$
20 DRAW"BM139,34;D10BU6R5BU6L5BR5D12BR4U12D6R5U6D12BR4"+E$
22 DRAW"BM166,32;D12BU12R5D5L5F7BR4U12F6U6D12"
25 DRAW"BM108,115;R44D36L44U36":CIRCLE(130,134),5:CIRCLE(130,134),10
26 CIRCLE(118,122),3:CIRCLE(142,122),3
28 PAINT(128,134),0,0:PAINT(119,122),0,0:PAINT(142,122),0,0
30 CIRCLE(130,134),15,0,1,0,.50
32 CIRCLE(118,110),3,0,1,.50,0
34 CIRCLE(142,110),3,0,1,.50,0
35 DRAW"BM152,128;R8E12H2E2F2E4F2G2E2F2G6H4"
36 DRAW"BM108,128;L8G8H2G2F2G4F2E2G2F2E6H4"
38 DRAW"BM124,152;D16L5D1R5U1"
40 DRAW"BM140,152;D16R5D1L5U1"
45 FOR DLAY=1 TO 2000:NEXT DLAY
50 CLS:PRINT@68,"A. FORMAT DISK"
52 PRINT@132,"B. KILL basic FILE"
54 PRINT@196,"C. RENAME FILE"
56 PRINT@260,"D. BACKUP DISK"
58 PRINT@324,"E. PRINT DISK DIRECTORY"
60 PRINT@388,"F. SAVE THIS PROGRAM (DISK)"
62 PRINT@452,">> SELECT (A-F)"
65 A$=INKEY$:IF A$=""THEN 65
70 AB$="ABCDEF"
80 ON INSTR(AB$,A$) GOTO 100,150,200,250,300,350
90 GOTO 65
100 ' FORMAT DISK
105 CLS:PRINT">> FORMAT DISK":PRINT:GOSUB 520:PRINT
106 PRINT"FORMAT DISK IN DRIVE 0 OR 1 ?":PRINT
108 B$=INKEY$:IF B$="" THEN 108
110 IF B$="0"THEN 115 ELSE 120
115 GOSUB 500:CLS:DSKINI0
120 GOSUB 500:CLS:DSKINI1

```

```

150 ' KILL basic FILE
155 CLS:PRINT">> KILL basic FILE":PRINT
156 PRINT"ENTER FILENAME/EXTENSION":LINEINPUT C$
160 PRINT:GOSUB 500
165 PRINT:KILL C$
168 PRINT"KILLED!":FOR A=1 TO 1000:NEXT A:GOTO 50
200 ' RENAME FILE
205 CLS:PRINT">> RENAME FILE":PRINT
208 PRINT"ENTER FILENAME A (FILENAME/EXT)":LINEINPUT D$
210 PRINT"ENTER FILENAME B (FILENAME/EXT)":LINEINPUT E$:PRINT
215 GOSUB 500:PRINT
216 RENAME D$ TO E$
218 PRINT"RENAMED!":FOR A=1 TO 1000:NEXT A:GOTO 50
250 ' BACKUP DISK
252 CLS:PRINT">> BACKUP DISK":PRINT :GOSUB520:PRINT
254 PRINT"BACKUP DISK IN DRIVE 0 OR 1 ?":LINEINPUT F$
255 IF F$="0"THEN 256 ELSE 260
256 GOSUB 500:CLS:BACKUP 0
258 END
260 GOSUB 500:CLS:BACKUP 1
265 END
300 ' PRINT DISK DIRECTORY
302 CLS:PRINT">> PRINT DISK DIRECTORY":PRINT
304 PRINT"PRINT DISK DIRECTORY FROM DRIVE 0 OR 1 ?":LINEINPUT G$
306 IF G$="0" THEN 310 ELSE 315
310 GOSUB 510:POKE 111,254:DIR
312 GOTO 50
315 GOSUB 510:POKE 111,254:DIR1
320 GOTO 50
350 ' SAVE DISK UTILITY
352 CLS:PRINT">> SAVE DISK UTILITY":PRINT
355 GOSUB 500:SAVE"DISKUTIL":PRINT
356 PRINT"SAVED!":FOR A=1 TO 1000:NEXT A:GOTO 50
360 END
500 PRINT"PREPARE DISK - PRESS":PRINT"<ENTER> WHEN READY":EXEC44539:RETURN
510 PRINT"PREPARE DISK & PRINTER - PRESS":PRINT"<ENTER> WHEN READY":EXEC44539:RE
TURN
520 PRINT"WARNING! THIS OPTION ERASES THE MEMORY & ENDS THE PROGRAM.":RETURN

```

COLOR LOGO

GRAPHICS PROGRAM

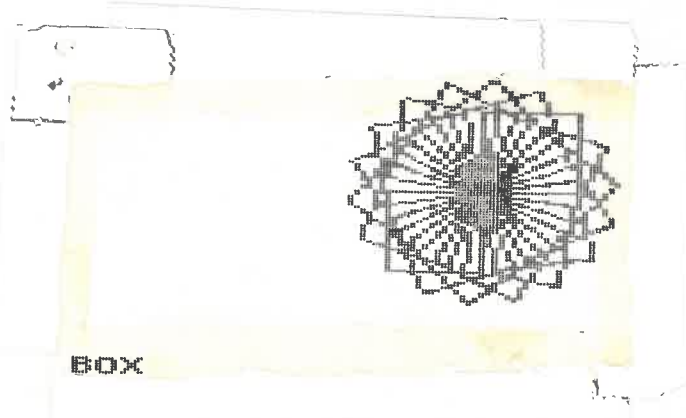
THE PROCEDURE: MULTI BOXES

```

TO BOX
  REPEAT 35 (REPEAT 4 (FD 30 RT
    90) RT 20)
  HT
END

```

After entering the program, go into RUN mode and type: BOX



ADVENTURE PROGRAM # 2

4K
CB

Can you escape?

THE LISTING: ADV2

```

0 ' *****
1 ' * ADVENTURE PROGRAM #2 *
2 ' *      BY JOE AHERN      *
3 ' *****
5 CLS:GOSUB 100
10 PRINT"YOU'RE IN THIS AIR-SEALED ROOM. YOU'VE GOT ABOUT FIVE MINUTES LEFT.
";
12 PRINT"YOU SEE PIPES ABOVE, LIT CANDLES, A BOLTED DOOR, AND A BARRED WINDO
W."
14 PRINT
15 INPUT"NOW WHAT ";A$
20 IF A$=R$ THEN PRINT"THE PIPES BURN YOUR HAND.":GOTO 15
22 IF A$=S$ THEN PRINT"O.K. A VOICE BOOMS OUT - THEY'LL EXPLODE IF YOU BLOW THEM
OUT!":GOTO 30
24 IF A$=T$ THEN PRINT"YOU CAN'T - THEY'RE BARRED!":GOTO 15
25 IF A$<>R$ OR A$<>S$ OR A$<>T$ THEN PRINT"YOU CAN'T DO THAT":GOTO 15
30 INPUT"NOW WHAT ";B$
32 IF B$=U$ THEN PRINT"O.K.":GOTO 40
34 IF B$=V$ THEN PRINT"SORRY, THE CANDLES BLEW UP!":END
35 IF B$<>U$ OR B$<>V$ THEN PRINT"YOU CAN'T DO THAT":GOTO 30
40 INPUT"NOW WHAT ";C$
42 IF C$=V$ THEN 45
43 IF C$<>V$ THEN PRINT"YOU CAN'T DO THAT":GOTO 40
45 PRINT:PRINT"YOU BLOW OUT THE CANDLES, AND THEY BLOW THE DOOR AWAY JUST E
NOUGH FOR YOU TO ESCAPE SAFELY.GREAT JOB!":END
100 R$=CHR$(74)+CHR$(85)+CHR$(77)+CHR$(80)+CHR$(32)+CHR$(80)+CHR$(73)+CHR$(80)+C
HR$(69)+CHR$(83)
102 S$=CHR$(71)+CHR$(69)+CHR$(84)+CHR$(32)+CHR$(67)+CHR$(65)+CHR$(78)+CHR$(68)+C
HR$(76)+CHR$(69)+CHR$(83)
104 T$=CHR$(79)+CHR$(80)+CHR$(69)+CHR$(78)+CHR$(32)+CHR$(87)+CHR$(73)+CHR$(78)+C
HR$(68)+CHR$(79)+CHR$(87)
106 U$=CHR$(68)+CHR$(82)+CHR$(79)+CHR$(80)+CHR$(32)+CHR$(67)+CHR$(65)+CHR$(78)+C
HR$(68)+CHR$(76)+CHR$(69)+CHR$(83)+CHR$(32)+CHR$(65)+CHR$(84)+CHR$(32)+CHR$(68)+
CHR$(79)+CHR$(79)+CHR$(82)
108 V$=CHR$(66)+CHR$(76)+CHR$(79)+CHR$(87)+CHR$(32)+CHR$(79)+CHR$(85)+CHR$(84)+C
HR$(32)+CHR$(67)+CHR$(65)+CHR$(78)+CHR$(68)+CHR$(76)+CHR$(69)+CHR$(83)
110 RETURN

```

NOTE: Make sure you type out the CHR\$ codes very carefully in lines 100-108.

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| 46. HTO-MATH | 47. ANIMALS |
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31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
58

NUMBER OF PROGRAMS_____

.50 X PROGRAMS_____

NAME_____

ADDRESS_____

CITY, STATE, ZIP_____

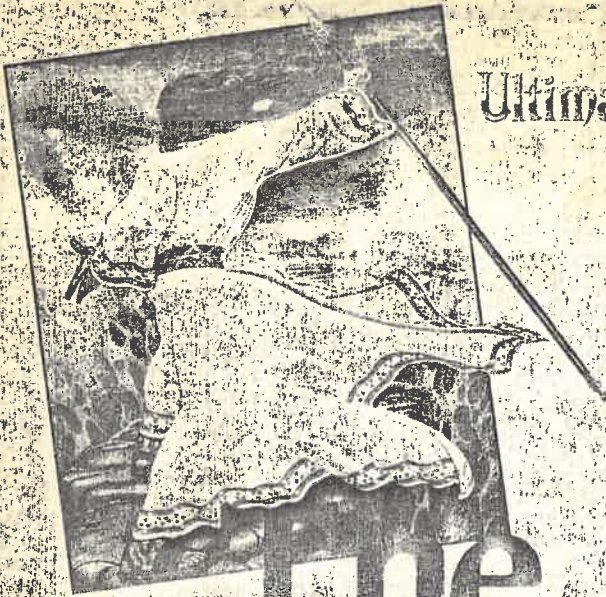
SORRY, MINIMUM OF 3 PROGRAMS PER ORDER.

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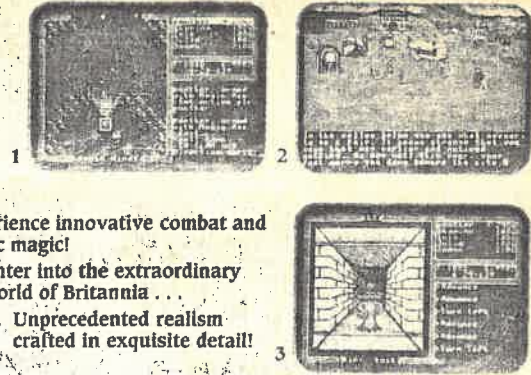
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